WHAT IS CLAIMED IS:

1. A gas delivery metering tube for delivering a gas, comprising:

at least one innermost and outermost axially aligned, nested tubes having an effective annular space formed between said at least one innermost and outermost nested tubes;

one or more arrays of orifices formed in each of said at least innermost and outermost nested tubes and extending along the substantial length of each of said tubes;

wherein a substantially uniform backing pressure is created within and along the substantial length of the innermost tube, thereby promoting substantially uniform delivery of the gas out of the orifices in the outermost tube and along the substantial length of the outermost tube.

2. The gas delivery metering tube of claim 1 wherein the effective annular space has an effective diameter D_{eff} and the innermost tube has an inner diameter D_{in}, and D_{eff} and D_{in} are within a factor of three of each other.

3. The gas delivery metering tube of claim 2 wherein D_{eff} is approximately equal to D_{in}.

4. The gas delivery metering tube of claim 1 wherein a ratio of the surface area of the outermost tube to the total cross sectional area of the orifices formed in said outermost tube is equal to or greater than approximately 10.

5. The gas delivery metering tube of claim 4 wherein said ratio is greater than 100.

6. The gas delivery metering tube of claim 1 wherein said metering tube is used in a chemical vapor deposition system.

7. The gas delivery metering tube of claim 1 wherein gas is supplied to one end of the innermost nested tube.

8. The gas delivery metering tube of claim 1 wherein the innermost tube has a length and a diameter and the ratio of the length to the diameter is in the range of approximately less than 70.

9. The gas delivery metering tube of claim 1 wherein the nested tubes are cylindrical.

10. The gas delivery metering tube of claim 1 wherein the nested tubes are rectangular.

11. In combination, the gas delivery metering tube of claim 1 and at least one injector assembly having at least one port for receiving said gas delivery metering tube.

12. In combination, the gas delivery metering tube of claim 1 and at least one shield assembly having at least one plenum for receiving said gas delivery metering tube.

13. The gas delivery metering tube of claim 1 wherein the innermost tube has the following properties:

$L/D < 70$

$D/d \approx > 10$

$Na_{port}/A_{tube} \approx \leq 1$

where L is the length and D is the diameter of the innermost tube, d is the diameter of one orifice in said array of orifices in said innermost tube, N is the number of orifices in the innermost tube, A_{port} is the cross sectional area of each of said orifices, and A_{tube} is the area of said innermost tube; and

the outermost tube has the following properties:

D_{eff} and D_{in} are within a factor of three of each other

$SurfaceArea_{outer}/NA_{outer} \approx 10$ or more

where D_{eff} is the effective annular space, $SurfaceArea_{outer}$ is the surface area of the outermost tube and NA_{outer} is the total cross sectional area of all of the orifices in the outermost tube.

14. The gas delivery metering tube of claim 13 wherein D_{eff} is approximately equal to D_{in}.

15. In combination, the gas delivery metering tube of claim 13 and at least one injector assembly having at least one port for receiving said gas delivery metering tube.

16. In combination, the gas delivery metering tube of claim 13 and at least one shield assembly having at least one plenum for receiving said gas delivery metering tube.